**Figure 1**

**Figure 2**

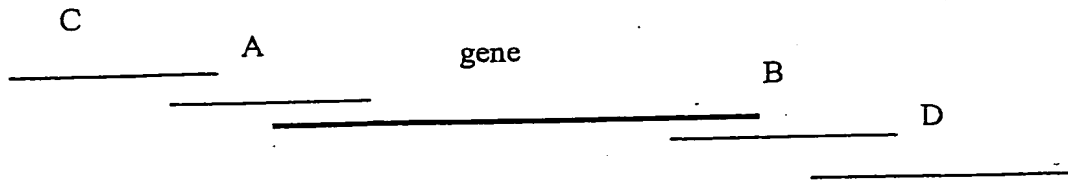HL with stem length 6bp:      -7,8 kcal/mol

```
            A
         A     U
         C     U
          U-A
          G-C
          G-C
          U-A
          C-G
          A-U
```

5´-.....AGGAGAUAUACCAUG      ACUAGCAAAGGAGAA... -3´

HL with stem length 7bp      -8,6 kcal/mol

```
          C A
         A     U
         U     C
          U-A
          U-A
          C-G
          G-C
          U-A
          C-G
          A-U
```

5´-.....AGGAGAUAUACCAUG      ACUAGCAAAGGAGAA... -3´

**Figure 2 (continued)**

HL with stem length 4 bp       -4,1 kcal/mol

```
          U U
         A   U
          A-U
          U-A
          C-G
          A-U
```

5'-.....AGGAGAUAUACCAUG    ACUAGCAAAGGAGAA... -3'

HL with stem length 5 bp       -4,4 kcal/mol

```
          U A
         U   U
          U-A
          G-C
          U-A
          C-G
          A-U
```

5'-.....AGGAGAUAUACCAUG    ACUAGCAAAGGAGAA... -3'

HL with stem length 8 bp       -11,8 kcal/mol

```
          U A
         U   U
          G-C
          C-G
          A-U
          C-G
          G-C
          U-A
          C-G
          A-U
```

5'-.....AGGAGAUAUACCAUG    ACUAGCAAAGGAGAA... -3'

**Figure 3**

**Figure 4**

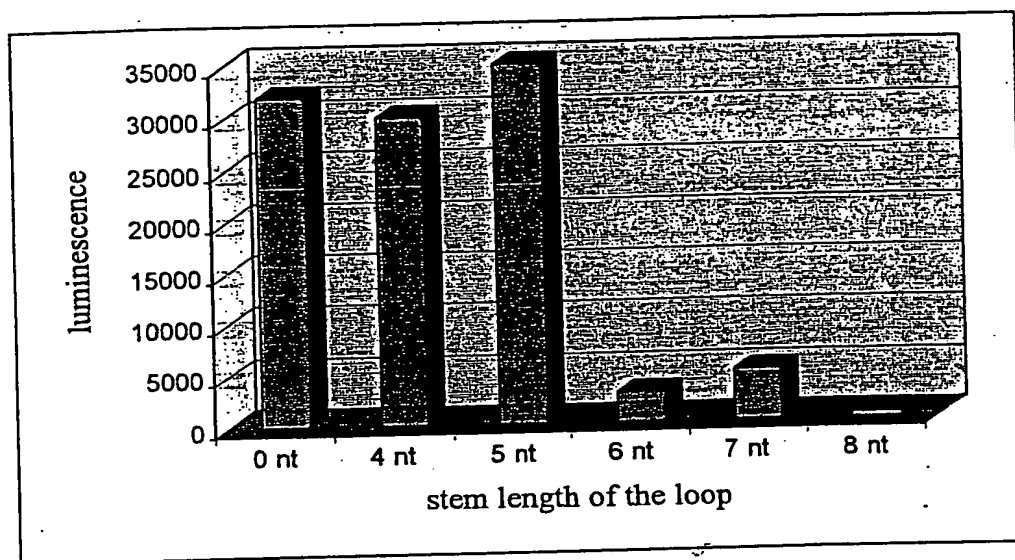HL with stem length 8 bp, 6 bases after start ATG

```
              G A
            U     U
            G-C
            C-G
            A-U
            C-G
            G-C
            U-A
            C-G
            A-U
```

5'-.....AGGAGAUAUACCAUGACUAGC      AAAGGAGAA...-3'

HL with stem length 8 bp, 9 bases after start ATG

```
              G A
            U     U
            G-C
            C-G
            A-U
            C-G
            G-C
            U-A
            C-G
            A-U
```

5'-.....AGGAGAUAUACCAUGACUAGCAAA      GGAGAA...-3'

HL with stem length 8 bp, 12 bases after start ATG

```
              G A
            U     U
            G-C
            C-G
            A-U
            C-G
            G-C
            U-A
            C-G
            A-U
```

**Figure 4 (continued)**

5´-.....AGGAGAUAUACCAUGACUAGCAAAGGA    GAA... -3´

```
              G  A
           U        U
            G - C
            C - G
            A - U
            C - G
            G - C
            U - A
            C - G
            A - U
```

5´-.....AGGAGAUAUACCAUGACUAGCAA **A**    GGAGAA... -3´

HL with stem length 8 bp, 12 bases after start

```
            - ATG :
             u GA u
            G - C
            C - G
            A - U
            C - G
            G - C
            U - A
            C - G
            A - U
```

5´-.....AGGAGAUAUACCAUGACUAGCAAAGGA    GAA... -3´

**Figure 4 (continued)**

HL with stem length 8 bp, 15 bases after start ATG

```
                                    G A
                                   U   U
                                   G-C
                                   C-G
                                   A-U
                                   C-G
                                   G-C
                                   U-A
                                   C-G
                                   A-U
```
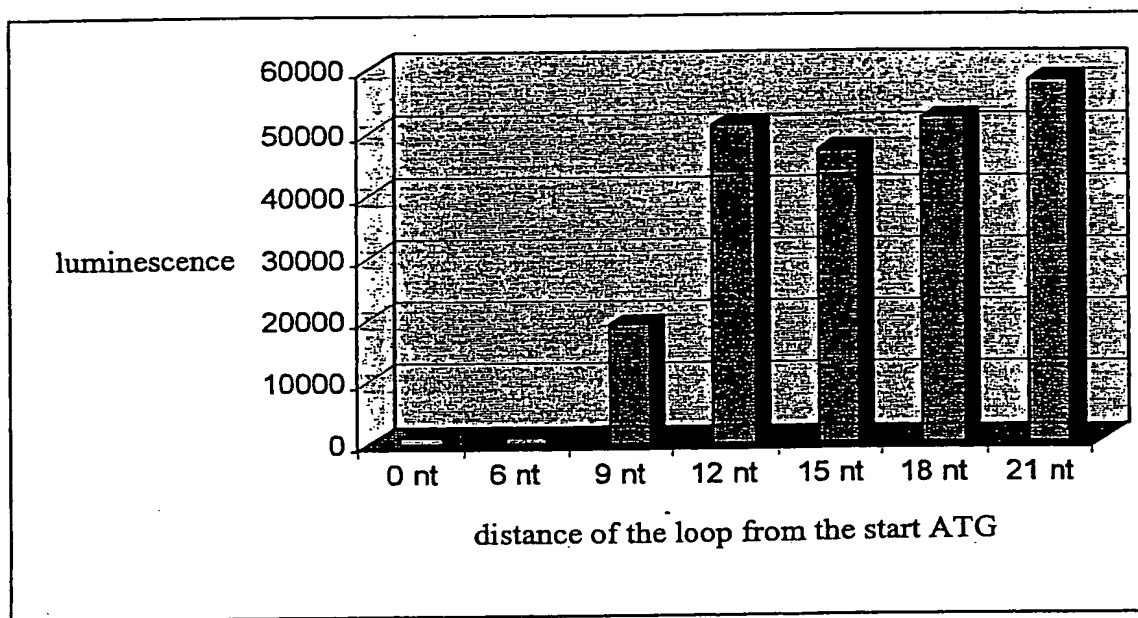
5´-.....AGGAGAUAUACCAUGACUAGCAAAGGAGAA     GAA... -3´

HL with stem length 8 bp, 18 bases after start ATG

```
                                         G A
                                        U   U
                                        G-C
                                        C-G
                                        A-U
                                        C-G
                                        G-C
                                        U-A
                                        C-G
                                        A-U
```

5´-.....AGGAGAUAUACCAUGACUAGCAAAGGAGAAGAA     CTT... -3´

HL with stem length 8 bp, 21 bases after start ATG

```
                                            G A
                                           U   U
                                           G-C
                                           C-G
                                           A-U
                                           C-G
                                           G-C
                                           U-A
                                           C-G
                                           A-U
```

5´-.....AGGAGAUAUACCAUGACUAGCAAAGGAGAAGAACTT     TTC... -3´

**Figure 5**



distance of the loop from the start ATG

**Figure 6**

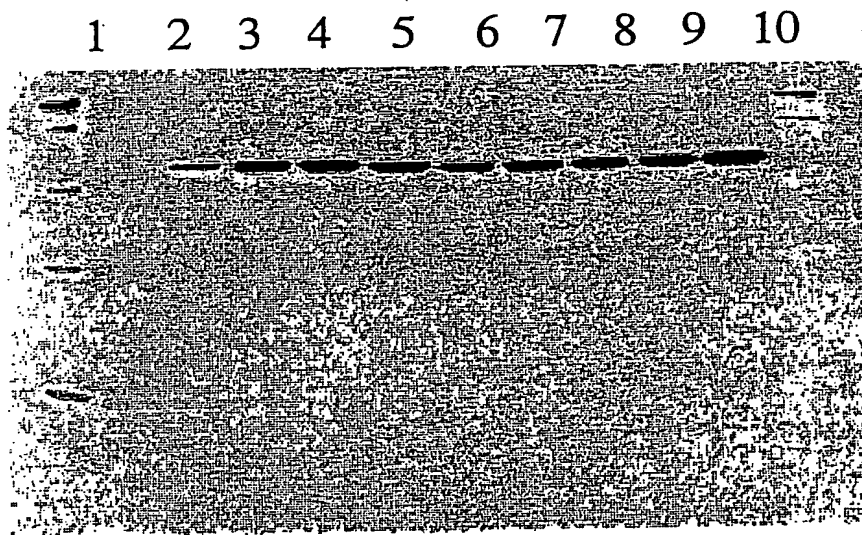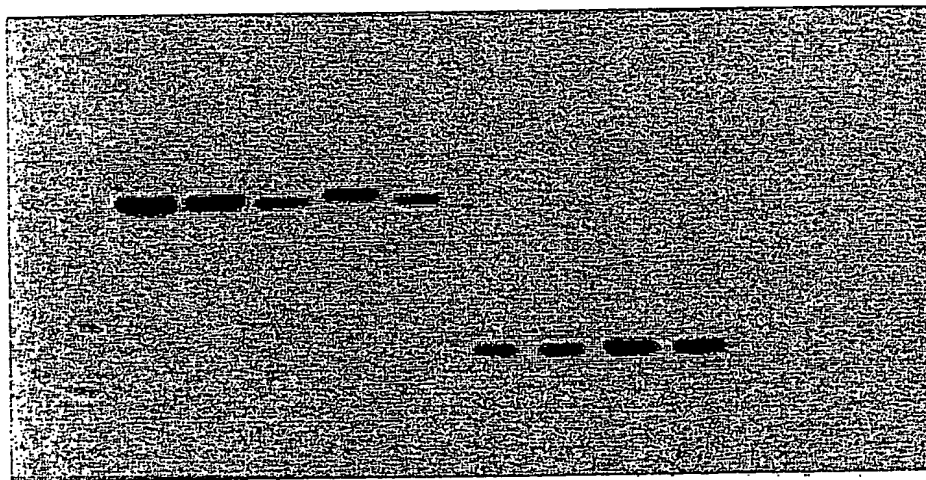Lane 1-9 = mutant 9-1 Lane 1 corresponds to the wild-type sequence

**Figure 7**

GFP/1049

Lanes 1,2 =  mutant 1,2 GFP without loop, Lanes 3,4 = mutant 1,2 GFP with loop
Lane 5 corresponds to the GFP wild-type sequence. Lanes 6,7 = mutant
1,2 1049 without loop. Lanes 8,9 = mutant 1,2 1049 with loop. Lane 10
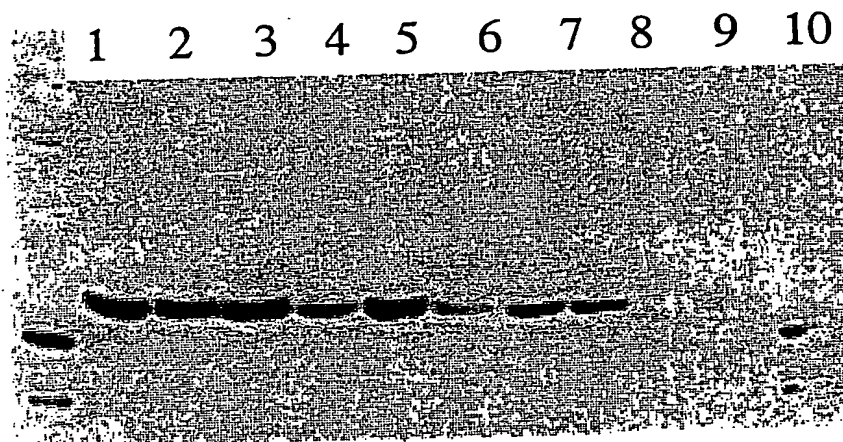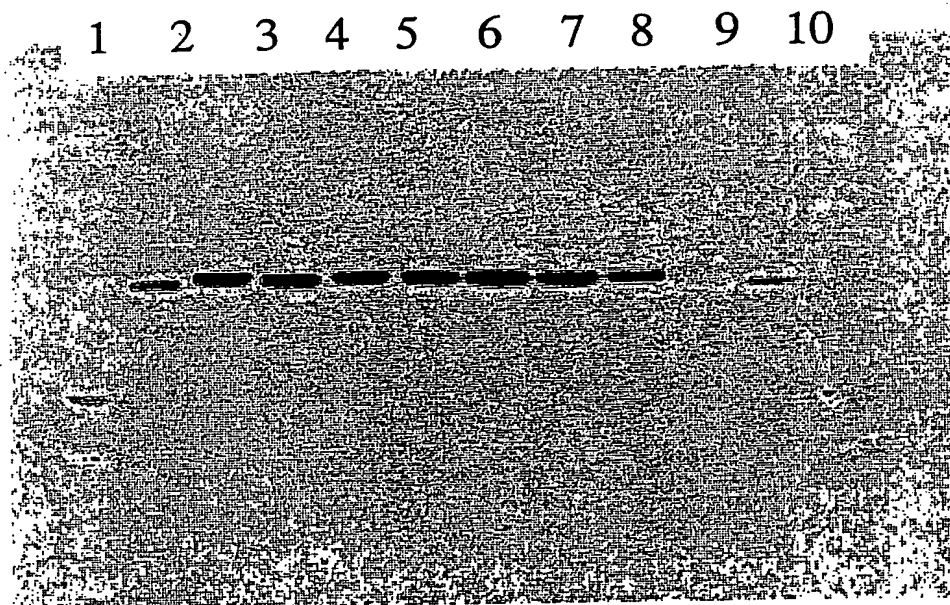corresponds to the 1049 wild-type sequence.

**Figure 8**

Survivin

Lanes 1-9 = mutant 1-9. Lane 10 corresponds to the wild-type sequence

**Figure 9**

GFP

Lanes 1-9 = mutant 1-9. Lane 10 corresponds to the wild-type sequence

**Figure 10**

### GFP/1049

Lanes 1,2 = mutant 1,2 GFP without loop. Lanes 3,4 = mutant 1,2 GFP with loop. Lane 5 corresponds to the GFP wild-type sequence. Lanes 6,7 = mutant 1,2 1049 without loop. Lanes 8,9 = mutant 1,2 1049 with loop. Lane 10 corresponds to the 1049 wild-type sequence.
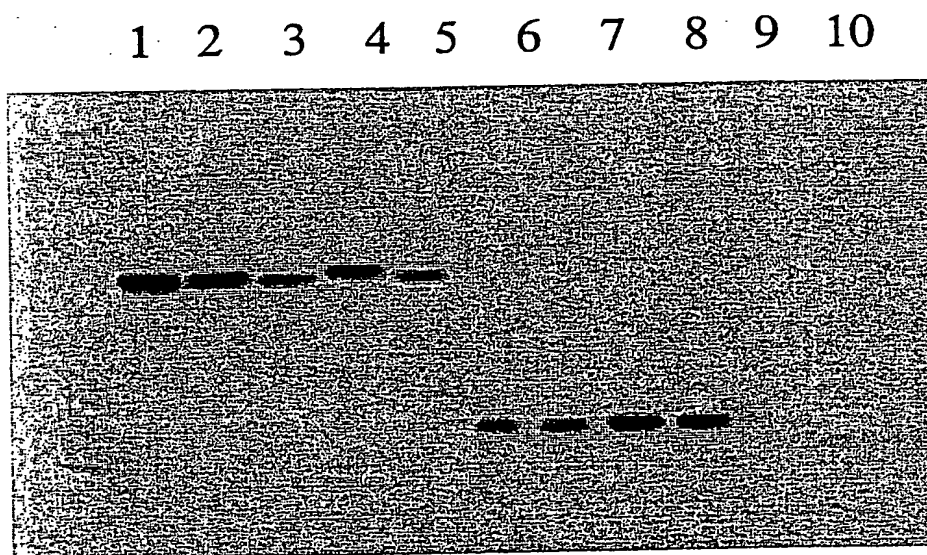
**Figure 11**

CIITA/Survivin

Lane 1 corresponds to the CIITA wild-type sequence. Lanes 2,3 = mutant 1,2 CIITA
with loop. Lanes 4,5 = mutant 1,2 CIITA without loop. Lane 6 corresponds to the
survivin wild-type sequence. Lanes 7,8 = mutant 1,2 survivin with loop. Lanes
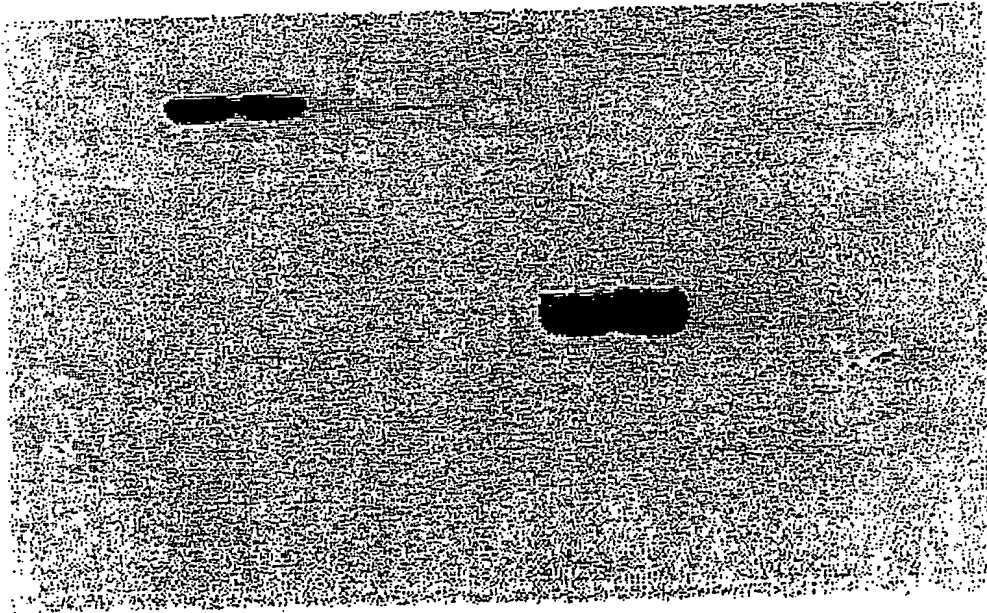9,10 = mutant 1,2 survivin without loop.

**Figure 12**

```
┌─────────────────┐
│ Loop            │
│       G A       │
│     T     T     │
│       G-C       │
│       C-G       │
│       A-T       │
│       C-G       │
│       G-C       │
│       T-A       │
│       C-G       │
└─────────────────┘
```

```
┌─────────────────┐
│ Loop'           │
│       G A       │
│     A     T     │
│       T-A       │
│       A-T       │
│       A-T       │
│       A-T       │
│       C-G       │
│       A-T       │
│       G-C       │
│       A-T       │
│     C-G-T-A     │
└─────────────────┘
```

**Figure 13**

1049/Survivin(CIITA loop and loop' variants

Lane 1 1049 mutant 1 loop, lane 2 mutant 1 loop', lane 3 corresponds to the 1049 wild-
type sequence; lane 4 survivin mutant 1 loop, lane 5 mutant 1 loop', lane 6
corresponds to the survivin wild-type sequence; lane 7 CIITA mutant 1 loop, lane
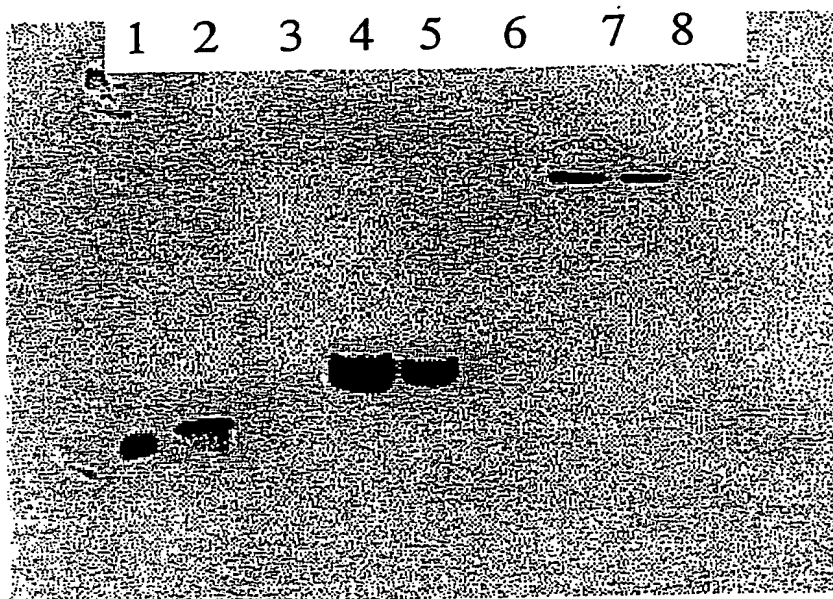8 mutant 1 loop', lane 9 corresponds to the CIITA wild-type sequence



**Figure 14**